

The heaviest rains occurred mainly during the first week of the month, this rainy period really being continuous from the last week in September. This period and that of temperature below the normal referred to above rather closely coincide. Rain did not fall as frequently during the balance of the month, but it was nevertheless well distributed, the number of rainy days being far above the normal for October within the area of excessive precipitation. There was a rainfall of 2.27 inches at Milwaukee, Wis., on the 3d, and the following heavy rainfalls were noted in Ohio: Akron, 2.70 inches on the 1st; Bucyrus, 2 inches on the 17th; Hiram, 2 inches on the 1st, in 6 hours; Hudson, 2.55 inches on the 1st, in 10 hours; Medina, 2.23 inches on the 1st, in 6 hours; Tiffin, 2.10 inches on the 1st. Concerning the heavy October rainfall in the Lower Michigan Peninsula, Mr. C. F. Schneider, section director, reports as follows:

The period of heaviest rainfall was from the 1st to 6th, inclusive, and 3 to 5 inches fell during this time at many stations in the lower peninsula. This was a continuation of a rainy period beginning September 24. From September 24 to October 6, inclusive, the total rainfall at Grand Rapids was 9.25 inches, Grand Haven 7.80, Big Rapids 6.11, Saranac 8.22, Owosso 5.55, and Saginaw 6.02. While the heavy rainfall in some localities caused all streams in the affected districts to rise somewhat, there was nothing approaching flood conditions. At Grand Rapids the maximum river stage was only 3.4 feet above the stage previous to the beginning of the rainy period.

Snow fell in nearly all portions of the district, although it was very light except in the Adirondack region on the 6th and 7th, when a heavy fall occurred.

SEVERE STORMS.

There was less wind movement than usual for October and but few severe windstorms, the stormiest period being generally from the 1st to the 4th. The highest velocity reported at any station was 64 miles from the southwest at Buffalo. Some little damage was done in Ohio by the combined wind and rain storms, as shown by the statement of Prof. J. Warren Smith, section director, Columbus, Ohio:

A large amount of damage was done along the southern border of the district by the heavy rain and wind storm that occurred on the 1st. In Allen, Hardin, and Wyandot Counties the high wind demolished a number of barns, unroofed several houses, destroyed orchards, and damaged a large amount of corn. In Summit County the rainfall was especially heavy and considerable damage was done by flooding. Washouts were reported on several railroads and the plant of the Akron

Selle Co. was flooded, throwing more than 200 men out of work for a short time. A gale passed over Lake Erie on the 4th, doing minor damage in Cleveland and other places along the lake shore. Many apples were blown from the trees in Ottawa County. At Cleveland a large Government dredge was blown upon the breakwater and badly damaged.

MISCELLANEOUS.

Fog.—Fog was observed on a couple of days during the first decade in the Lake Superior region, but it occurred mainly during the second decade in other portions of the district. Transportation interests, as far as known, were not affected, except in the Detroit River in the early morning of the 18th, when the fog became so dense as to require the suspension of navigation for two and a half hours.

Auroras.—Auroras were observed in Vermont and New York State on the 10th and 24th and in Michigan on the 18th.

OCTOBER, 1911, LAKE LEVELS.

The following data, from the report of the United States Lake Survey Office, relative to water levels of the Great Lakes during the month, are reproduced here because of their value to various interests in this district:

Mean October level above tidewater at New York.

	Feet.
Superior.....	602. 23
Michigan-Huron.....	579. 60
Erie.....	571. 53
Ontario.....	244. 62

Lake Superior is 0.03 foot higher than last month, 0.31 foot higher than a year ago, 0.64 foot below the average stage of October of the last 10 years, 1.33 feet below the high stage of October, 1869, and 0.65 foot above the low stage of October, 1879. It will probably fall 0.2 foot during November.

Lakes Michigan-Huron are 0.03 foot lower than last month, 0.49 foot lower than a year ago, 1.14 feet below the average stage of October of the last 10 years, 3.44 feet below the high stage of October, 1885, and 0.13 foot above the low stage of October, 1896. They will probably fall 0.3 foot during November.

Lake Erie is at the same level as last month, 0.35 foot lower than a year ago, 0.62 foot lower than the average stage of October of the last 10 years, 2.17 feet below the high stage of October, 1885, and 0.73 foot above the low stage of October, 1895. It will probably fall 0.3 foot during November.

Lake Ontario is 0.29 foot lower than last month, 0.76 foot lower than a year ago, 1.25 feet lower than the average stage of October of the last 10 years, 3.19 feet below the high stage of October, 1861, and 0.95 foot above the low stage of October, 1895. It will probably fall 0.3 foot during November.